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chamber to remove the matrix material from the column chamber.

Pursuant to rule 121(c)(3), the version of the amended claims to show changes made is submitted in a separate paper enclosed herein.

#### SUMMARY OF AMENDMENTS

Claims 1, 5, 8 and 17 (and all other remaining claims by virtue of dependency) have been amended to recite the limitation of rotating either said rod or the column chamber with respect to the other. Support for this limitation can be found page 8, line 21; page 12, line 10; and page 13 line 18. No new matter is added thereby. Pursuant to rule 121(c)(3), the version of the amended claims to show changes made is submitted in a separate paper enclosed herein.

#### REMARKS

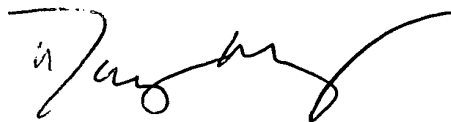
##### 37 USC 1.111(b)

The Examiner has indicated that the Applicant's communication does not satisfy the requirements of 37 CFR 1.111(b) because it fails to recite the limitation that "the use of a rod and column chamber which are constructed and arranged such that the matrix is packed and unpacked by rotating either the rod or the column chamber with respect to the other." Accordingly, the Applicant has amended Claims 1, 5, 8 and 17 (and all other remaining claims by virtue of dependency) to recite the limitation of rotating either said rod or the column chamber with respect to the other. The Applicant therefore respectfully requests that the Examiner withdraw the objections.

#### Closure

Applicant has made an earnest attempt to place the above-referenced application in condition for allowance and action toward that end is respectfully requested. Should the Examiner have any further observations or comments, he is invited to contact the undersigned for resolution.

Respectfully submitted,



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The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service as 1<sup>st</sup> Class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on the date set forth below.

  
Douglas E. McKinley, Jr.

December 19, 2002  
date



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Homan, et al.	) Art Unit: 1724
	)
Serial No: 09/177,902	) Examiner: Ivars C. Cintins
	)
Filed: 10/23/98	) Paper No: 12
	)
For: METHOD AND APPARATUS FOR	) File No: E-1658
PACKED COLUMN SEPARATIONS	)
AND PURIFICATIONS	) Date: January 22, 2002
	)

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Version of Amended Claims to Show Changes Made

Claims 1, 5, 8, and 17 were amended as follows where underlined matter was inserted and bracketed matter deleted:

1. (thrice amended) A method of packing and unpacking a column chamber, comprising the steps of:  
flowing a mixture of a matrix material and fluid into a column chamber and forming a packed column from the matrix material, said column chamber having a first port for receiving said mixture, and outlet port and an actuator port wherein said actuator port is provided as having a rod having a binary end placed within said actuator port wherein said binary end of said rod blocks the flow of said matrix material to said outlet port in a first position, permits the flow of said matrix material to said outlet port in a second position, and maintains contact with said fluid flow and allows the flow of said fluid through said outlet port in all positions;  
capturing said matrix material and permitting said fluid to flow therepast by positioning said binary end of said rod in said first position by rotating either said rod or the column chamber with respect to the other; and

opening said outlet by positioning said binary end of said rod in said second position by rotating either said rod or the column chamber with respect to the other, thereby permitting said matrix material and said fluid to flow through said outlet port thereby unpacking the matrix material from the column chamber.

5. (four times amended) A method of forming a packed column comprising: providing a column chamber, the column chamber having an inlet end and an outlet end, the outlet end having an actuator port and a flow port, the flow port alternately open or partially obstructed by a binary end of a rod placed in the actuator port by rotating either said rod or the column chamber with respect to the other wherein said binary end of said rod blocks the flow of a matrix material in a first position, permits the flow of said matrix material in a second position, and maintains contact with said fluid flow and allows the flow of a fluid in all positions; and flowing a mixture of a first fluid and a matrix material into the column chamber through the inlet end for packing the matrix material within the column chamber.
8. (thrice amended) A method for purifying a component of a sample comprising:  
providing a column chamber, the column chamber having an inlet end and an outlet end, the outlet end having an actuator port and a flow port, the flow port alternately open or partially obstructed about a binary end of a rod placed in the actuator port wherein said binary end of said rod blocks the flow of a matrix material in a first position, permits the flow of said matrix material in a second position, and maintains contact with said fluid flow and allows the flow of a fluid in all positions;  
flowing a first fluid and a matrix material into the column chamber through the inlet end and along a first flow path to form a packed column of the matrix material within the column chamber, the rod holding the matrix

material and permitting flow of the first fluid therethrough, the matrix material being configured to selectively retain a component of the sample; flowing the sample through the packed column for separating the component from the rest of the sample; unobstructing the flow port by rotating either said rod or the column chamber with respect to the other; and flowing a second fluid through the column to remove the matrix material from the column chamber.

17. (thrice amended) A method for purifying a biological sample comprising: providing a column chamber, the column chamber having an inlet end and an outlet end, the outlet end having an actuator port and a flow port, the flow port partially obstructed with a rod with a binary end wherein said binary end of said rod blocks the flow of a matrix material in a first position, permits the flow of said matrix material in a second position, and maintains contact with said fluid flow and allows the flow of a fluid in all positions; flowing a mixture of a first fluid and a matrix material into the column chamber to form a packed column of the matrix material within the column chamber, the matrix material being configured to selectively retain a biological sample; flowing a sample containing the biological sample through the packed column to separate the biological sample from other components of the sample; rotating either said rod or the column chamber with respect to the other and flowing a second fluid through the column chamber to remove the matrix material from the column chamber.